

D-21-05

FED ELP CLASS  
S305

USER ACTIVITIES:  
NAVY - MC, OS, SH

REVIEWER ACTIVITIES:  
ARMY - AT  
DLA - IS  
NSA - NS

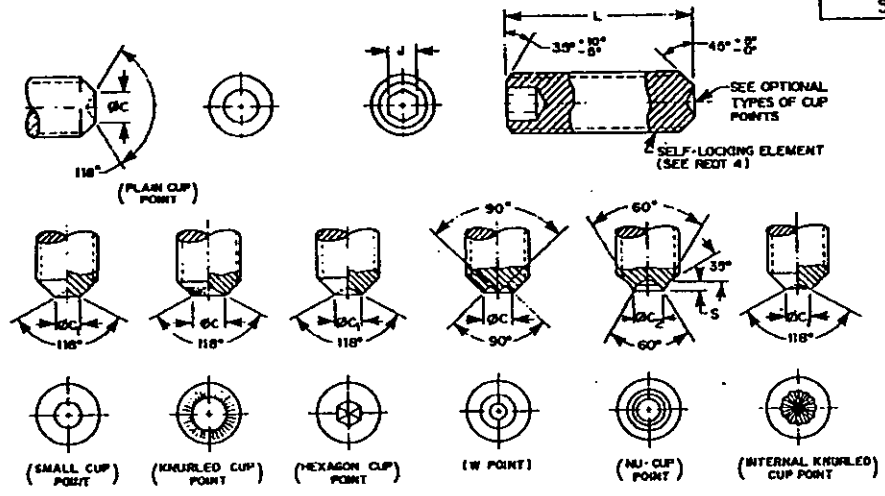


TABLE 1. DASH NUMBERS AND DIMENSIONS

NOMINAL SIZE		.060	.086	.112	.138	.164	.190		
THREADS PER INCH		80 UNF-3A	64 UNF-3A	48 UNF-3A	40 UNF-3A	36 UNF-3A	32 UNF-3A		
J	BOCKET WIDTH ACROSS FLATS	MIN	.028	.035	.050	.062	.078	.094	
C	POINT	MAX MIN	.033 .027	.047 .039	.061 .051	.074 .064	.087 .076	.102 .088	
C <sub>1</sub>	POINT	MAX MIN	.032 .027	.043 .038	.056 .051	.069 .062	.082 .074	.095 .086	
C <sub>2</sub>	POINT	MAX MIN	.027 .022	.043 .038	.059 .054	.074 .068	.090 .084	.101 .095	
S	POINT LENGTH	MAX MIN	.007 .004	.010 .007	.013 .008	.017 .012	.021 .016	.024 .019	
L	LENGTH	TOLERANCE	DASH NUMBER						
			PLAIN	PLAIN	PLAIN	PLAIN	PLAIN	PLAIN	SELF-LOCKING
.125 .188 .250 .312 .375	±.010		1	9 ✓	17	27	37	48	120 ✓
			2	10 ✓	18	28	38	49	121
			3	11 ✓	19	29	39	50	122
					20	30	40	51	123
					21	31	41	52 ✓	124
								43	53 ✓
.438 .500 .562 .625							54	126	
							55	127 ✓	
							56	128	
							57	129	
.750 1.000 1.250	±.020							130	

✓ INACTIVE FOR NEW DESIGN AFTER 29 DECEMBER 1972

Ⓔ ENTIRE STANDARD REVISED

APPROVED 29 JAN 1964 REVISED 15 SEPT 88

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This military standard is approved for use by all Departments and Agencies of the Department of Defense.  
Revision for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

P/A ARMY - AR Other Code AIR FORCE - 99	INTERNATIONAL INTEREST	TITLE SETScrew, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, UNF-3A, PLAIN AND SELF-LOCKING	MILITARY STANDARD <b>MS51964</b>
		PROCUREMENT SPECIFICATION FF-S-200	SUPERSEDES: MSS101B, MSS1020, BCTX4 AND IN PART MS18063, BCTX1, 1.1, 1.2, 3 AND 5, BCU35 AND 5.1
		PAGE 1 OF 3	

TABLE I. DASH NUMBERS AND DIMENSIONS - CONTINUED

NOMINAL SIZE		.250	.3125	.375	.4375	.500					
THICKNESS PER DASH		28 UNF-3A	24 UNF-3A	24 UNF-3A	20 UNF-3A	20 UNF-3A					
J	SOCKET WIDTH ACROSS FLATS	NOM	.125	.156	.188	.229	.250				
ØC	POINT	MAX	.122	.172	.212	.252	.291				
		MIN	.118	.156	.194	.232	.270				
ØC <sub>1</sub>	POINT	MAX	.125	.156	.187	.218	.250				
		MIN	.114	.144	.174	.204	.235				
ØC <sub>2</sub>	POINT	MAX	.156	.190	.241	.286	.333				
		MIN	.150	.185	.236	.281	.329				
S	POINT LENGTH	MAX	.027	.038	.041	.047	.054				
		MIN	.022	.033	.036	.042	.049				
L	LENGTH	TOLERANCE	DASH NUMBER								
			PLAIN	SELF-LOCKING	PLAIN	SELF-LOCKING	PLAIN	SELF-LOCKING	PLAIN	PLAIN	SELF-LOCKING
			63	131	78	144	92				
			64	132							
		±.010	65	133	79	145	93				
			66	134	80	146	94	156	118 ✓		166
			67 ✓	135 ✓	81 ✓	147	95 ✓	157	119 ✓	167	167
			68	136	82 ✓	147	96	157	120 ✓	168	168
			69	138	83	148	97	158		169	169
			70	139	84	149	98	159		169	169
		±.020	71	140	85	150	99	160		170	170
			72	141	85	151	99	161	110	171	171
				142	86	152	100	162	111 ✓	172	172
				143		153	101	163	112 ✓	173	173
		±.031				154		164		174	174
						155		165		175	175
									176	176	
									177	177	

✓ INACTIVE FOR NEW DESIGN AFTER 29 DECEMBER 1972

TABLE I. DASH NUMBERS AND DIMENSIONS - CONTINUED

NOMINAL SIZE		.625	.750	.875	1.000 ✓	
THICKNESS PER DASH		18 UNF-3A	16 UNF-3A	14 UNF-3A	14 UNF-3A	
J	SOCKET WIDTH ACROSS FLATS	NOM	.312	.375	.500	.562
ØC	POINT	MAX	.311	.450	.530	.609
		MIN	.307	.425	.502	.579
ØC <sub>1</sub>	POINT	MAX	.312	.375	.437	.500
		MIN	.295	.357	.418	.486
ØC <sub>2</sub>	POINT	MAX	.425	.523	—	—
		MIN	.428	.518	—	—
S	POINT LENGTH	MAX	.067	.081	—	—
		MIN	.062	.076	—	—
L	LENGTH	TOLERANCE	DASH NUMBER			
			PLAIN	PLAIN	PLAIN	PLAIN
		±.010				
			253	268		
			254	269		
					281	295 ✓
		±.020	255	270	294	296 ✓
			256	271	295	297 ✓
			257	272	296	298 ✓
			258	273	297	299 ✓
		±.031	259	274	298	300 ✓
			260	275	299	301 ✓
			261	276	299	302 ✓
			262	277	298	302 ✓
			263	278	291	301 ✓

✓ INACTIVE FOR NEW DESIGN AFTER 30 JUNE 1966

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P.A. ARMY - AR Other Govt AIR FORCE - 99	INTERNATIONAL INTEREST	TITLE	MILITARY STANDARD
		SETScrew, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, UNF-3A, PLAIN AND SELF-LOCKING	MS51964
PROCUREMENT SPECIFICATION FF-9-200	SUPERSEDES	MS51018, MS51020, BCTX4 AND IN PART MS18063, BCTX1, 1.1, 1.2, 3 AND 5, BCUX5 AND 5.1	PAGE 2 OF 3

DD FORM 672-1 (UNCLASSIFIED)

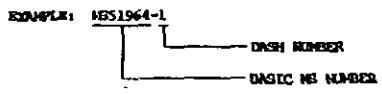
PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

3305-1716

APPROVED 29 JAN 1964 REVISED (E) FOR CHANGES SEE PAGES 1, 2 AND 3

**REQUIREMENTS:**

1. **MATERIAL:** ALLOY STEEL IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
2. **PROTECTIVE COATING AND SURFACE TREATMENT:** CADMIUM PLATED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
3. **THREADS:** THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/2. ACCEPTABILITY OF SCREW THREADS FOR SIZES .150 AND SMALLER SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 21. ACCEPTABILITY OF SCREW THREADS FOR SIZES .250 AND LARGER SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 22. SELF-LOCKING SCREWS SHALL BE INSPECTED PRIOR TO INSTALLATION OF LOCKING ELEMENT.
4. **SELF-LOCKING ELEMENT:**
  - (a). THE SELF-LOCKING ELEMENT SHALL BE IN ACCORDANCE WITH THE PROCUREMENT DOCUMENT.
  - (b). MAXIMUM RING GAGE DIAMETER THAT LOCKING REGION OF SETSCREW MUST PASS THRU FREELY OR WITH FINGER PRESSURE SHALL BE THE NOMINAL SIZE PLUS 0.010.
  - (c). MIL-F-18240 DOES NOT ESTABLISH TORQUE REQUIREMENTS FOR LENGTHS ABOVE THE DASHED LINE. ONLY A POSITIVE INDICATION OF TORQUE IS REQUIRED.
5. **TOLEANCES:** ANGLES 45°, UNLESS OTHERWISE SPECIFIED.
6. **PART NUMBER:** THE PART NUMBER SHALL CONSIST OF THE BASIC MS NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM TABLE I.



MS51964-1 INDICATES - SETSCREW, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, .060-80 UNF-3A, LENGTH .125, PLAIN.

**NOTES:**

1. ALL DIMENSIONS ARE IN INCHES.
2. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
3. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

**INTERCHANGABILITY RELATIONSHIP**

SCREWS COVERED BY THE DASH NUMBERS GIVEN IN MS51018 AND MS51020 ARE CANCELLED AFTER 29 JANUARY 1964 AND SUPERSEDED BY THE SCREWS COVERED ON MS51964 HAVING THE SAME DASH NUMBERS. CANCELLED SCREWS MAY BE USED UNTIL EXISTING STOCKS ARE DEPLETED. USE ONLY MS51964 SCREWS FOR NEW DESIGN.

SCREWS COVERED BY THE DASH NUMBERS GIVEN IN MS18063 IN PART ARE CANCELLED. CANCELLED SCREWS MAY BE USED UNTIL EXISTING STOCKS ARE DEPLETED. USE ONLY THE SUPERSEDING SCREWS FOR NEW DESIGN. REPLACEMENT SHALL BE IN ACCORDANCE WITH TABLE II.

**TABLE II. INTERCHANGABILITY**

CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING
MS18063	MS51964	MS18063	MS51964	MS18063	MS51964	MS18063	MS51964
DASH NUMBER		DASH NUMBER		DASH NUMBER		DASH NUMBER	
4	120	32	135	64	150	82	164
8	121	37	136	70	151	85	165
13	122	45	137	74	152	92	166
19	123	50	138	78	153	40	167
25	124	57	139	81	154	53	168
31	125	63	140	84	155	60	169
36	126	69	141	91	156	66	170
44	127	73	142	39	157	72	171
49	128	77	143	52	158	76	172
56	129	15	144	59	159	80	173
68	130	21	145	65	160	83	174
9	131	27	146	71	161	86	175
14	132	38	147	75	162	87	176
20	133	51	148	79	163	88	177
26	134	58	149				

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			<b>MS51964</b>	
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